

## **REMARKS**

Reconsideration of the application is requested in view of the modifications above and the remarks below. Applicants have indicated in Claim 1 that the alkali metal compounds are used as a mixed salt. Support for this can be found in the originally filed Claim 5. Claim 5 has been cancelled accordingly. The amendments above have been made to place the application in condition for allowance or to better place the application in condition for appeal.

### **1. Rejection Under 35 USC 102**

The Office Action rejected Claims 1, 2, 6, 7, 9-10, and 12 under 35 USC 102 over U.S. Pat. No. 4,402,737 (Kronenwetter). The rejection should be withdrawn in view of the remarks below.

Applicants' invention, as encompassed by these claims, relates to a process that reduces tungsten oxide powders, molybdenum oxide powders, or mixtures thereof, in the presence of alkali metal compounds, wherein these alkali metal compounds are used in the form of a mixed salt. The process prepares tungsten powder, molybdenum powder, mixtures thereof, or a carbide. The at least two alkali metal compounds are used in a ratio so that mixed alkali tungstate or molybdate formed in an intermediate step ((Li, Na, K)<sub>2</sub>WO<sub>z</sub>, (Li, Na, K)<sub>2</sub>MoO<sub>z</sub>) have a melting point of less than about 550°C. The value of z is from 3 to 4. In one embodiment, the invention relates to a tungsten carbide powder prepared according to Claim 1.

It is well settled that in order for a prior art reference to anticipate claim, the reference must disclose each and every element of the claim with sufficient clarity to prove its existence in prior art. The disclosure requirement under 35 USC 102 presupposes knowledge of one skilled in art of claimed invention, but such presumed knowledge does not grant license to read into prior art reference teachings that are not there. See *Motorola Inc. v. Interdigital Technology Corp.* 43 USPQ2d 1481 (1997 CAFC).

Kronenwetter does not disclose each and every element of Claims 1, 2, 6, 7, 9-10, and 12 with sufficient clarity to prove Applicants' invention existed in the prior art. Amended Claim 1 includes the features of originally filed Claim 5 which does not stand rejected as being anticipated by Kronenwetter. The other claims, which

depend on Claim 1, include these limitations. Indeed, Kronenwetter does not disclose using the alkali metal compounds as a mixed salt. Therefore, the rejection is believed to be overcome. Reconsideration is requested.

## **2. Rejection Under 35 USC 103**

The Office Action rejected Claims 3-5, 8 and 11 under 35 USC 103 over Kronenwetter. The rejection should be withdrawn. In view of the modifications above, the remarks below refer to Claims 3, 4, 8 and 11.

Applicants' invention, as encompassed by these claims, relates to a process that reduces tungsten oxide powders, molybdenum oxide powders, or mixtures thereof, in the presence of alkali metal compounds, wherein these alkali metal compounds are used as a mixed salt. The process prepares tungsten powder, molybdenum powder, mixtures thereof, or a carbide. At least two alkali metal compounds are used in a ratio so that mixed alkali tungstate or molybdate formed in an intermediate step  $((\text{Li}, \text{Na}, \text{K})_2 \text{WO}_z, (\text{Li}, \text{Na}, \text{K})_2 \text{MoO}_z)$  has a melting point of less than about 550°C. In one embodiment, the alkali compounds are used in a total amount that ranges from about 0.2 to about 1.5 mole %, based on the tungsten and/or molybdenum oxide. In another embodiment, the alkali compounds have a molar ratio of Na to Li of from about 0.9 to about 1.26 and wherein, in the further presence of a potassium compound, the potassium replaces Na and/or Li up to about 40 mole %. In another embodiment, the tungsten oxide powder is  $\text{WO}_2$  and the molybdenum oxide powder is  $\text{MoO}_2$ . And in another embodiment, the invention relates to a molybdenum metal powder prepared according to Claim 1.

The rejection does not establish a *prima facie* case of obviousness. It is well settled that to establish a *prima facie* case of obviousness, the USPTO must satisfy all of the following requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification must have had a reasonable expectation of success, as determined from the vantage point of one of ordinary skill in the art at

the time the invention was made. *Amgen v. Chugai Pharmaceutical Co.* 18 USPQ 2d 1016, 1023 (Fed Cir, 1991), *cert. denied* 502 U.S. 856 (1991). Third, the prior art reference or combination of references must teach or suggest all of the limitations of the claims. *In re Wilson*, 165 USPQ 494, 496, (CCPA 1970). The rejection should be withdrawn in view of the remarks below.

One of ordinary skill in the art following Kronenwetter would not have been motivated to modify Kronenwetter and practice or make Applicants' invention. Kronenwetter, for instance, does not teach using the alkali metal compounds as a mixed salt. In fact, Kronenwetter teaches that sodium and potassium are impurities, and thus, one of ordinary skill in the art would have been discouraged from using any appreciable amount of such substances at all and instead rely on the addition of lithium only. In other words, Kronenwetter would have taught away from Applicants' invention. Reconsideration is requested.

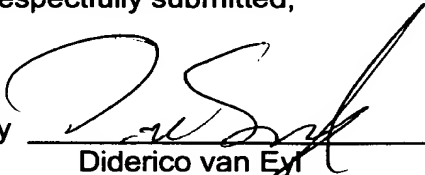
Further, Kronenwetter does not provide a motivation for using this at least two alkali metal compounds in the form of a mixed salt. One of ordinary skill in the art would not have expected the results Applicants have obtained.

One of ordinary skill in the art would understand that the preparation of such mixed salts usually requires a separate process step and therefore one skilled in the art would not want to use these. Surprisingly, Applicants found that using at least two alkali metal compounds as a mixed salt unexpectedly results in an increase of the Fisher Sub-Sieve Sizer (FSSS) value of the metal powder produced as well as of the FSSS value of a metal carbide powder produced from such a metal powder. For instance, Examples 1 and 2 are conducted in the same manner except that in Example 1 a mixed salt of the alkali metal compounds was used whereas in Example 2 a mixture of individual alkali carbonates was used. As can be seen from these examples using a mixed salt results in a remarkably increase of the average particle size (FSSS) of the tungsten carbide produced. The FSSS of the WC powder produced according to Example 1 is 67  $\mu\text{m}$ , the FSSS of the WC powder according to Example 2 is only 53  $\mu\text{m}$ . Such information evidences the advantages of the presently claimed process over Kronenwetter.

As such, one of ordinary skill in the art following Kronenwetter would not have been motivated to modify Kronenwetter, practice or make Applicants' invention and expect the results Applicants have obtained. Reconsideration is requested.

In view of the foregoing amendments and remarks, allowance of all the pending claims is earnestly requested.

Respectfully submitted,

By   
Diderico van Eyl  
Attorney for Applicants  
Reg. No. 38,641

Bayer Chemicals Corporation  
100 Bayer Road  
Pittsburgh, Pennsylvania 15205-9741  
PHONE: (412) 777-3069  
FACSIMILE PHONE NUMBER:  
412-777-2612

s:/sr/dve0659